

The Calappidae of the Marquesas Islands with a description of a new species of *Mursia* (Crustacea, Decapoda, Brachyura)

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ABSTRACT

A study of the extensive collection of calappid crabs made by the MUSORSTOM 9 expedition to the Marquesas Archipelago provided an opportunity to update and revise the list of species known from the islands and revealed a new species. *Mursia poupini* n. sp. is easily distinguished from the other *Mursia* species with crook-shaped second male pleopod (*M. africana*, *M. flamma*, *M. microspina*). *M. poupini* n. sp. differs from *M. africana* in its much shorter lateral spine; from *M. flamma* in the shape of the lower horizontal row on outer palmar face, and in lacking the sharply triangular teeth on posterior margin of carapace; from *M. microspina* in its longer lateral spine, in the shape of the lower horizontal row on outer palmar face, and in lacking the large oculus-shaped patch on inner palmar face.

KEY WORDS

Crustacea,
Decapoda,
Brachyura,
Calappidae,
Mursia,
Pacific Ocean,
Marquesas Islands,
new species.

MOTS CLÉS

Crustacea,
Decapoda,
Brachyura,
Calappidae,
Mursia,
océan Pacifique,
Îles Marquises,
espèce nouvelle.

RÉSUMÉ

*Les Calappidae des îles Marquises et description d'une nouvelle espèce de *Mursia* (Crustacea, Decapoda, Brachyura).*

L'étude d'une importante collection de Clappidae, récoltés par l'expédition MUSORSTOM 9 dans les îles Marquises, fournit l'occasion de mettre à jour et de réviser la liste des espèces de ces îles et de décrire une nouvelle espèce. *Mursia poupini* n. sp. se distingue facilement des autres espèces de *Mursia* (*M. africana*, *M. flamma* et *M. microspina*) qui ont le second pléopode du mâle en crochet. *M. poupini* n. sp. diffère de *M. africana* par son épine latérale beaucoup plus courte ; de *M. flamma* par la forme de la rame horizontale inférieure sur sa face palmaire externe et par l'absence de dents triangulaires aiguës sur la limite postérieure de la carapace ; de *M. microspina* par son épine latérale plus longue, la forme de la rame horizontale inférieure sur sa face palmaire externe et l'absence de la grosse tache en forme d'oculus sur sa face palmaire interne.

INTRODUCTION

The Marquesas Archipelago in the Central Pacific is an isolated group of volcanic islands, at the poor extremity of the Indo-Pacific biodiversity gradient. The MUSORSTOM 9 expedition to the Marquesas sampled the benthos, from the intertidal to the upper-bathyal, by land-based and vessel-based scientists (Richer de Forges *et al.* 1999). The 240 decapod and stomatopod crustaceans that have been reported from the Marquesas (Richer de Forges *et al.* 1999) include several calappid crabs. The study of the extensive collection of calappid crabs made by the MUSORSTOM 9 expedition provided an opportunity to update and revise those records, and revealed a new species of the deep-sea calappid genus *Mursia* Desmarest, 1823.

SYSTEMATICS

Genus *Ashtoret* Galil & Clark, 1994*Ashtoret picta* (Hess, 1865)

Matuta picta Hess, 1865: 158, pl. 6 (13).

Matuta banksii – Rathbun 1907: 68.

Ashtoret lunaris – Poupin 1996a: 25.

MATERIAL EXAMINED. — **Eiao I.** Stn DW 1283, 7°53.8'S, 140°34.5'W, 55-56 m, 7.IX.1997, 2 ♀ ♀ cl 29.1, 26.6 mm, 1 ovigerous ♀ 28.3 mm (MNHN B27565).

Ua Huka I. Stn 29, 8°55.70'S, 139°32.00'W, 7-11 m, X.1997, 3 ovigerous ♀ ♀ cl 30.0-31.4 mm, 7 juv. (MNHN). — Stn 34, 8°56.80'S, 139°35.70'W, 10-15 m, X.1997, 2 ♂ ♂ cl 37.6, 26.9 mm, 1 ♀ cl 26.5 mm, 18 juv. (MNHN). — Stn CP 1295, 8°54.2'W, 139°37.5'W, 50-54 m, 8.IX.1997, 2 ♀ ♀ cl 28.9, 28.2 mm, 3 ovigerous ♀ ♀ cl 28.0-31.4 mm (MNHN B27568).

Hiva Oa I. Stn DW 1214, 9°49.8'S, 140°03.1'W, 25-40 m, 29.VIII.1997, 1 ♂ cl 39.8 mm, 1 ovigerous ♀ cl 29.5 mm (MNHN B27569).

DISTRIBUTION. — Red Sea and East Africa to Australia, Tahiti and Marquesas Islands, intertidal to 55 m (Galil & Clark 1994: 18).

Genus *Calappa* Weber, 1795*Calappa calappa* (Linnaeus, 1758)

Cancer calappa Linnaeus, 1758: 630.

Calappa calappa – Galil 1997: 279, figs 1b; 3; 4b; 29.

MATERIAL EXAMINED. — **Ua Huka I.** Stn 24, 8°53.60'S, 139°37.00'W, 9-15 m, X.1997, 8 juv. (MNHN). — Stn 25, 8°55.70'S, 139°36.70'W, 6-15 m, X.1997, 1 juv. (MNHN). — Stn 29, 8°55.70'S, 139°32.00'W, 7-11 m, X.1997, 1 juv. (MNHN). — Stn 34, 8°56.80'S, 139°35.70'W, 10-15 m, X.1997, 2 juv. (MNHN). — Stn CP 1295, 8°54.2'S, 139°37.5'W, 50-54 m, 8.IX.1997, 1 ♂ cl 39.2 mm (MNHN).

Eiao I. Stn DW 1155, 7°58.9'S, 140°43.3'W, 80 m, 23.VIII.1997, 1 ♂ cl 76.5 mm (MNHN B27575).

Nuku Hiva I. Stn CP 1188, 8°48.6'S, 140°03.4'W, 35-55 m, 26.VIII.1997, 1 ♂ cl 40.5 mm (MNHN).

DISTRIBUTION. — East Africa to Japan, Hawaii, Tuamotu Archipelago and Marquesas Islands, intertidal to 80 m (Galil 1997: 281, fig. 29).

Calappa gallus (Herbst, 1803)

Cancer gallus Herbst 1803: 18, 46, pl. 58, fig. 1.

Calappa aff. gallus – Poupin 1998: 39.

MATERIAL EXAMINED. — **Eiao I.** Stn DW 1160, 7°57.8'S, 140°02.0'W, 49-55 m, 23.VIII.1997, 1 ♂ cl 29.9 mm, 1 ♀ cl 32.6 mm (MNHN B27577).

Nuku Hiva I. Stn CP 1187, 8°49.2'S, 140°03.5'W, 25-30 m, 26.VIII.1997, 1 ♂ cl 34.9 mm (MNHN B27578). — Stn CP 1188, 8°48.6'S, 140°03.4'W, 35-55 m, 26.VIII.1997, 3 ♂ ♂ cl 23.2-35.6 mm (MNHN B27579). — Stn DW 1224, 9°44.6'S, 138°51.1'W, 115-120 m, 30.VIII.1997, 1 juv. (MNHN B27566).

Ua Huka I. Stn 34, 8°56.80'S, 139°35.70'W, 10-15 m, X.1997, 1 ♀ cl 21.8 mm (MNHN B27573).

Fatu Hiva I. Stn DW 1241, 10°27.8'S, 138°40.6'W, 85-130 m, 1.IX.1997, 1 juv. (MNHN B27566).

Hiva Oa I. Stn DW 1210, 9°50.4'S, 139°00.5'W, 98-100 m, 29.VIII.1997, 1 ♂ cl 46.1 mm (MNHN B27583).

DISTRIBUTION. — Red Sea and East Africa to Japan, Hawaii, Tonga and Marquesas Islands, intertidal to 160 m (Galil 1997: 296, fig. 31).

Calappa hepatica (Linnaeus, 1758)

Cancer hepaticus Linnaeus, 1758: 630.

Calappa hepatica – Boone 1934: 32, pls 8-10; 1938: 212. — Poupin 1996a: 25.



FIG. 1. — *Cycloes marisrubri* Galil & Clark, 1996, ♂ cl 37.7 mm, Nuku Hiva I., stn CP 1188, 8°48.6'S, 140°03.4'W, 35-55 m, 26.VIII.1997 (MNHN B27623), dorsal view.

MATERIAL EXAMINED. — **Eiao I.** Stn CP 1160, 7°57.8'S, 140°02.0'W, 49-55 m, 23.VIII.1997, 1 ♂ cl 29.9 mm, 1 ovigerous ♀ cl 37.2 mm (MNHN B27584).

Hiva Oa I. Stn DW 1203, 9°52.7'S, 139°02.2'W, 60-61 m, 28.VIII.1997, 1 juv. (MNHN B27585). — Stn DW 1212, 9°49.9'S, 139°02.2'W, 50-80 m, 29.VIII.1997, 1 ♀ cl 36.3 mm, 1 juv. (MNHN B27586). — Stn DW 1213, 9°50.3'S, 140°03.2'W, 18-20 m, 29.VIII.1997, 1 ♀ cl 28.2 mm (MNHN B27587). — Stn DW 1214, 9°49.8'S, 140°03.1'W, 25-40 m, 29.VIII.1997, 1 ♂ cl 37.7 mm, 2 juv. (MNHN B27588). — Stn DW 1215, 9°49.5'S, 140°02.2'W, 49-62 m, 29.VIII.1997, 1 ♀ cl 25.4 mm (MNHN B27589). — Stn DW 1227, 9°44.2'S, 138°52.5'W, 84-85 m, 30.VIII.1997, 1 ♂ cl 31.4 mm (MNHN B27590).

Nuku Hiva I. Stn DW 1161, 8°55.6'S, 140°06.1'W, 30-37 m, 24.VIII.1997, 1 juv. (MNHN B27591). — Stn CP 1179, 8°46.7'S, 140°13.4'W, 58-62 m, 25.VIII.1997, 1 ♂ cl 37.7 mm, 1 ovigerous ♀ cl 33.2 mm, 1 juv. (MNHN B27592). — Stn CP 1185, 8°48.9'S, 140°03.4'W, 31-33 m, 26.VIII.1997, 1 juv.

(MNHN B27593). — Stn CP 1187, 8°49.2'S, 140°03.5'W, 25-30 m, 26.VIII.1997, 1 ♂ cl 34.9 mm (MNHN B27594).

Ua Huka I. Stn 24bis, 8°53.60'S, 139°37.00'W, 20-34 m, X.1997, 4 juv. (MNHN B27595). — Stn 34, 8°56.80'S, 139°35.70'W, 10-15 m, X.1997, 1 ♂ 24.9 mm, 1 ♀ cl 23.5 mm, 8 juv. (MNHN B27596). — Stn CP 1297, 8°54.2'S, 139°37.4'W, 90-150 m, 8.IX.1997, 1 ♂ cl 30.8 mm (MNHN B27597).

DISTRIBUTION. — Red Sea and East Africa to Japan, Hawaii, Marquesas Islands and Clipperton Island, intertidal to 150 m (Galil 1997: 300, fig. 31).

Calappa sebastieni Galil, 1997

Calappa aff. hepatica — Poupin 1996a: 97.

Calappa sp. — Poupin 1996b: 30, pl. 14d.

Calappa sebastieni Galil, 1997: 312, figs 17f; 20f; 23; 33. — Poupin 1998: 39.

MATERIAL EXAMINED. — **Hiva Oa I.** Stn DW 1218, 9°44.5'S, 138°50.9'W, 125-135 m, 30.VIII.1997,



FIG. 2. — *Cycloes marisrubri* Galil & Clark, 1996, ♀ cl 39.3 mm, Nuku Hiva I., stn DW 1170, 8°45.1'S, 140°13.1'W, 104-109 m, 25.VIII.1997 (MNHN B27619), dorsal view.

7 juv. (MNHN B27598). — Stn DW 1235, 9°42'S, 139°03'W, 105-285 m, 31.VIII.1997, 2 juv. (MNHN B27599).

Fatu Hiva I. Stn DW 1242, 10°28.1'S, 138°41.1'W, 119-122 m, 1.IX.1997, 4 juv. (MNHN B27600).

DISTRIBUTION. — Known only from the Marquesas Islands, 100-285 m (Galil 1997: 313, fig. 33).

Genus *Cycloes* de Haan, 1837

Cycloes marisrubri Galil & Clark, 1996 (Figs 1; 2)

Cycloes marisrubri Galil & Clark, 1996: 197, figs 6b; 9c; 10d-f; 12a, b.

MATERIAL EXAMINED. — **Eiao I.** Stn DW 1155, 7°58.9'S, 140°43.3'W, 80 m, 23.VIII.1997, 9 juv. (MNHN B27601). — Stn DW 1156, 7°59.0'S,

140°43.7'W, 80 m, 23.VIII.1997, 1 ♂ cl 38.9 mm, 1 ♀ cl 20.2 mm, 6 juv. (MNHN B27602). — Stn CP 1160, 7°57.8'S, 140°02.0'W, 49-55 m, 23.VIII.1997, 4 juv. (MNHN B27603). — Stn DW 1206, 7°57.3'S, 140°42.6'W, 84 m, 4.IX.1997, 1 ovigerous ♀ cl 31.8 mm, 1 juv. (MNHN B27604). — Stn DW 1279, 7°59.4'S, 140°42.2'W, 23-70 m, 6.IX.1997, 1 juv. (MNHN B27605). — Stn DW 1280, 7°58.9'S, 140°43.3'W, 87-98 m, 6.IX.1997, 2 juv. (MNHN B27606). — Stn DW 1284, 7°54.5'S, 140°35.7'W, 53-55 m, 7.IX.1997, 1 ♂ cl 37.6 mm, 15 juv. (MNHN B27607).

Hiva Oa I. Stn DR 1200, 9°49.9'S, 139°08.9'W, 96-100 m, 28.VIII.1997, 1 juv. (MNHN B27608). — Stn DW 1203, 9°52.7'S, 139°02.2'W, 60-61 m, 28.VIII.1997, 1 juv. (MNHN B27609). — Stn DW 1211, 9°50.2'S, 139°02.5'W, 50 m, 29.VIII.1997, 2 ♂ ♂ cl 34.0, 34.3 mm (MNHN B27610). — Stn DW 1212, 9°49.9'S, 139°02.2'W, 50-80 m, 29.VIII.1997, 2 ♂ ♂ cl 25.9, 26.9 mm, 3 ♀ ♀ cl 25.1-

31.0 mm, 6 juv. (MNHN B27611). — Stn DW 1213, 9°50.3'S, 140°03.2'W, 18-20 m, 29.VIII.1997, 1 juv. (MNHN B27612). — Stn CP 1215, 9°49.5'S, 140°02.2'W, 49-62 m, 29.VIII.1997, 2 ♂♂ cl 18.5, 18.2 mm (MNHN B27613). — Stn CP 1227, 9°44.2'S, 138°52.5'W, 84-85 m, 30.VIII.1997, 2 ♂♂ cl 36.9, 39.5 mm, 5 juv. (MNHN B27614). — Stn DW 1228, 9°44.6'S, 138°51.5'W, 107-108 m, 30.VIII.1997, 2 juv. (MNHN B27615). — Stn DW 1230, 9°43.6'S, 139°06.6'W, 95-100 m, 31.VIII.1997, 1 juv. (MNHN B27616). — Stn DW 1239, 9°42.2'S, 139°03.6'W, 89-95 m, 31.VIII.1997, 2 ♀♀ cl 37.7, 33.8 mm, 3 juv. (MNHN B27626).

Nuku Hiva I. Stn DW 1163, 8°57.3'S, 140°06.1'W, 78-85 m, 24.VIII.1997, 1 ♀ cl 19.6 mm (MNHN B27618). — Stn DW 1170, 8°45.1'S, 140°13.1'W, 104-109 m, 25.VIII.1997, 1 ♀ cl 39.3 mm, 2 ovigerous ♀♀ cl 38.0, 36.7 mm, 1 juv. (MNHN B27619). — Stn CP 1177, 8°45.1'S, 140°15.1'W, 108-112 m, 25.VIII.1997, 2 ♂♂ cl 35.8, 39.0 mm (MNHN B27620). — Stn CP 1179, 8°46.7'S, 140°13.4'W, 58-62 m, 25.VIII.1997, 1 ♂ cl 35.9 mm (MNHN B27621). — Stn CP 1180, 8°46.2'S, 140°04.6'W, 80-82 m, 26.VIII.1997, 1 ovigerous ♀ cl 39.2 mm (MNHN B27622). — Stn CP 1188, 8°48.6'S, 140°03.4'W, 35-55 m, 26.VIII.1997, 2 ♂♂ cl 37.7, 40.5 mm, 2 ♀♀ cl 28.7, 31.7 mm, 2 ovigerous ♀♀ cl 30.8, 31.7 mm (MNHN B27623). — Stn CP 1189, 8°46.4'S, 140°03.6'W, 70 m, 26.VIII.1997, 1 ♂ cl 38.7 mm, 1 ♀ cl 35.7 mm, 11 juv. (MNHN B27624). — Stn CP 1237, 9°42'S, 139°04'W, 95-305 m, 31.VIII.1997, 1 ♂ cl 44.2 mm, 1 ovigerous ♀ cl 36.9 mm, 1 juv. (MNHN B27625).

Ua Pou I. Stn CP 1239, 9°21.3'S, 140°07.7'W, 53-57 m, 3.IX.1997, 3 juv. (MNHN B27617). — Stn DW 1260, 9°25.4'S, 140°07.3'W, 49-100 m, 3.IX.1997, 1 ♀ cl 31.4 mm, 4 juv. (MNHN B27627). — Stn CP 1264, 9°21.3'S, 140°07.7'W, 53-57 m, 3.IX.1997, 1 ♂ cl 38.0 mm, 1 ovigerous ♀ cl 34.8 mm, 1 juv. (MNHN). — Stn CP 1265, 9°20.4'S, 140°07.3'W, 90-92 m, 3.IX.1997, 1 ♂ cl 36.3 mm, 1 ovigerous ♀ cl 36.5 mm (MNHN B27628).

Ua Huka I. Stn 24, 8°53.60'S, 139°37.00'W, 9-15 m, X.1997, 1 ♂ cl 38.5 mm, 2 juv. (MNHN B27629). — Stn 34, 8°56.80'S, 139°35.70'W, 10-15 m, X.1997, 5 juv. (MNHN B27630).

Fatu Hiva I. Stn DR 1245, 10°29.2'S, 138°36.2'W, 85-130 m, 1.IX.1997, 1 juv. (MNHN B27631).

DISTRIBUTION. — Red Sea, Ceylon, Maldives and Andaman Island, Indonesia, Hawaiian Island, Marquesas Islands, 9-305 m (Galil & Clark 1996: 198).

DESCRIPTION

Color

C. marisrubri displays a marked difference in color between male and female specimens. Male

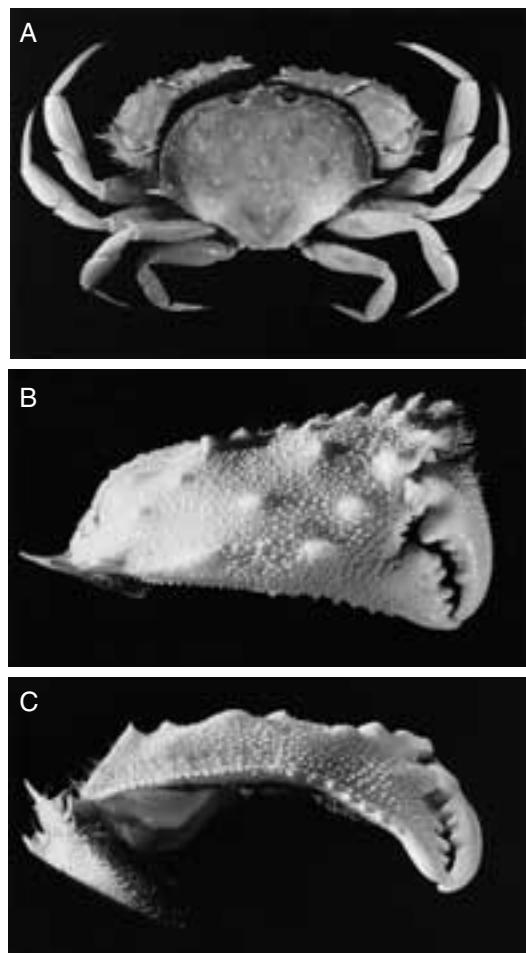


FIG. 3. — *Mursia poupinii* n. sp., ♂ paratype cl 48.9 mm, Eiao I., stn DW 1269, 7°56'S, 140°43'W, 420-430 m, 4.IX.1997 (MNHN B27633); A, dorsal view; B, left cheliped, external surface; C, left cheliped, lower margin.

carapace and legs are uniformly purple, the inner palmar face with small purple patch at base of dactylus. Female carapace and chelipeds are tan with irregularly reticulate reddish markings.

Genus *Mursia* Desmarest, 1823

Mursia poupinii n. sp. (Figs 3; 4)

TYPE MATERIAL. — Holotype ♂, Dumont d'Urville Plateau, stn CP 1251, 9°47'S, 139°38'W, 500-650 m, 2.IX.1997, cl 41.0 mm (MNHN B27632); paratype ♂, Eiao I., stn DW 1269, 7°56'S, 140°43'W, 420-430 m, 4.IX.1997, cl 48.9 mm (MNHN B27633).



FIG. 4. — *Mursia poupinii* n. sp., ♂ holotype, cl 41.0 mm, Dumont d'Urville Plateau, stn CP 1251, 9°47'S, 139°38'W, 500-650 m, 2.IX.1997 (MNHN B27632), dorsal view.

ETYMOLOGY.—Named in honor of Joseph Poupin, in appreciation for his role in exploring the decapod fauna of French Polynesia.

DISTRIBUTION.—Known only from the type location — Marquesas Islands.

DESCRIPTION

Carapace convex, transversely ovate, 1.3 wide as long. Dorsal surface of carapace granulate; radial ridges little defined, bearing low granulate tubercles. Front wider than orbit, trilobate; median lobe triangular, projecting beyond lateral lobes. Gastric, cardiac, intestinal regions bordered laterally by shallow groove. Anterolateral margin arcuate, granulate, bearing nine granulate tubercles. Lateral spine 0.1 carapace width, granular. Posterolateral margin sharply convergent, beaded. Posterior margin bearing laterally a rounded denticle.

Eyes filling orbit, eyestalk short, granulate, setose, cornea large. Orbital margins with long plumose

setae. Supraorbital margin unifissured. Inner orbital tooth separated from orbital margin by wide hiatus opening to oblique subhepatic canal. Subhepatic region minutely granulate. Third maxilliped not covering anterior part of buccal cavity, ischium of endopod with granulate row distally forming stridulating organ when rasped against milled ridge on dactylus of chela. Chelipeds massive, subequal, granulose. Merus distally bispinose, distal spine twice as long as proximal spine. Superior margin of carpus distally dentate. Upper margin of palm crested, cut into eight denticles. External surface of palm prominently granulate, with larger, closer granules ventrally; bearing two tubercles below crest, two longitudinal rows of three granulate tubercles and with granular ridge, unevenly trilobate, with keel-like proximal lobe, broad median lobe, smaller distal lobe; lower margin serrate. Internal surface of palm with thick pilose band near lower margin.

Dactyl granulose on outer surface, bearing stridulating crest on inner surface. Dactyl of larger cheliped bearing large curved tooth basally, fitting into molariform teeth on pollex. Pereiopods large, laterally compressed, dactyli long, styliform. Pereiopodal meri with upper, lower margins granulose, upper margin of carpi costate, granulate. Male abdomen prominently crested on second segment, crest bifissured, medially concave; segments 3-5 fused; 6th segment subquadrate, its lateral margins slightly concave. Telson triangular, slightly shorter than 6th segment. First male pleopod stout, tapering, curved distad, distally spinulose. Second male pleopod long, slender, distally crook-shaped, tip slightly recurved.

Color

Carapace and pereiopods dull orange, diffuse reddish crescents surround posteriorly carapacial tubercles. Inner palmar face with small patch at base of dactylus.

REMARKS

M. poupinii n. sp. is easily distinguished from the other *Mursia* species with crook-shaped second male pleopod – *M. africana* Galil, 1993, *M. flamma* Galil, 1993, *M. microspina* Davie & Short, 1989; *M. poupinii* n. sp. differs from *M. africana* in its much shorter lateral spine; from *M. flamma* in the shape of the lower horizontal row on outer palmar face, and in lacking the sharply triangular teeth on posterior margin of carapace; from *M. microspina* in its longer lateral spine, in the shape of the lower horizontal row on outer palmar face, and in lacking the large oculus-shaped patch on inner palmar face.

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